

Date: Wed, 21 Sep 94 04:30:33 PDT  
From: Ham-Space Mailing List and Newsgroup <ham-space@ucsd.edu>  
Errors-To: Ham-Space-Errors@UCSD.Edu  
Reply-To: Ham-Space@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Space Digest V94 #266  
To: Ham-Space

Ham-Space Digest                    Wed, 21 Sep 94                    Volume 94 : Issue 266

Today's Topics:

    ARLK041 Keplerian data  
    Military SATCOM advice needed!  
    Packet Radio (SAREX)!!!  
    Satellite frequencies listing  
    STS-64 Checkpoint #11  
    Two-Line Orbital Element Set: Space Shuttle  
    Windows satellite logging program

Send Replies or notes for publication to: <Ham-Space@UCSD.Edu>  
Send subscription requests to: <Ham-Space-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Space Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-space".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

-----

Date: Tue, 20 Sep 1994 16:57:29 EDT  
From: psinntp!arrl.org!usenet@uunet.uu.net  
Subject: ARLK041 Keplerian data  
To: ham-space@ucsd.edu

SB KEP @ ARL \$ARLK041  
ARLK041 Keplerian data

ZCZC SK09  
QST de W1AW  
Keplerian Bulletin 41 ARLK041

-----

Date: Tue, 20 Sep 1994 12:49:27  
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!gatech!news-feed-1.peachnet.edu!

ukma!harold.ca.uky.edu!hpeach@network.ucsd.edu  
Subject: Military SATCOM advice needed!  
To: ham-space@ucsd.edu

Last Christmas I received a Grove ScannerBeam as a gift. I am now getting around to putting it up (I have a lot of half-built kits too). My thought has been that my main use for this antenna would be to receive military satellites in the 200-400 MHz band. To do this is going to require the outlay of some additional cash so I have a few questions:

- 1) Is there enough traffic being transmitted in the clear via these birds to make the investment worthwhile? What type of comms (i.e., would I be able to listen to the operations going on in Haiti if I had this in place now or would I just pickup routine stuff?) can one expect to hear?
- 2) Is the typical mode FM, SSB, or what?
- 3) Is it reasonable to assume that a log periodic, 10dB preamp, and a PRO-2004 (feeding an ICOM 745 if SSB is needed) will do a decent job?
- 4) WHO MAKES AN INEXPENSIVE, REMOTELY POWERED PREAMP THAT WOULD WORK FOR THIS APPLICATION?
- 5) WHERE CAN I FIND AN INEXPENSIVE, LIGHT DUTY AZ-EL ROTOR FOR THIS APPLICATION?

Please reply via e-mail as I do not regularly read this group.

73, Harold, N4FLZ

---

Harold  
hpeach@ca.uky.edu

---

Date: 21 Sep 1994 08:24:44 GMT  
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!cs.utexas.edu!  
usc!nic-nac.CSU.net!charnel.ecst.csuchico.edu!csusac!csus.edu!netcom.com!  
ix.netcom.com!netnews@network.ucsd.edu  
Subject: Packet Radio (SAREX)!!!  
To: ham-space@ucsd.edu

For those of you who read my article, "(SAREX) Packet Radio MAYBE!!!!", I rec'd

many responses to it in various forms, some supportive, some critical and then there was this response that really hit home. As you can see, Gerry spent a fair amount of time to prepare this letter and I felt that I couldn't keep it to myself. He clearly represents the "SPIRIT OF AMATEUR RADIO" and did a great job in explaining SAREX to me... Thanks Gerry, I hope all of you enjoy this as much as I have.

73's to all

Mike

WD6EFM - Sacramento, Ca.

<start of forwarded message>

---

Mike, I feel like maybe a personal response might help...

In article <35gum4\$7m2@ixnews1.ix.netcom.com> you write:  
>Well, after spending many late nights waiting for the shuttle to pass  
>over.. hearing nothing time after time, it's real nice to know that  
>they "MIGHT" turn it on for the last few orbits... in fact, trying  
>to work the shuttle has gotten as bad as trying to find an open lane  
>at a bowling alley. The only way you can bowl anymore is to become a  
>member of a league. Do the members of the amateur radio community have  
>to go back to elementary school to be allowed to talk to the shuttle  
>anymore? STS-64 was more boring than watching the crystals grow in  
>previous missions.

Let me start with a caveat: I'm off for several years going back to school... trying to get into medical school. Officially, I'm on leave without pay from my job as a contractor at NASA's Johnson Space Center. I am still a co-investigator on SAREX. I'm no longer involved in the day-to-day warfare iwth SAREX, but I did ALL the training for over 6 years, and am intimately familiar with the problems the Team faces from management and the Astronaut Office...

Over time, the missions have gotten more involved. This serves to severely impact crew time for SAREX operations. Therefore, when the crew are all busy, it gets harder for them to look out the window, say to themselves, "Selves, I think I'll play SAREX during this CONUS pass," and just do it. On missions when there are a lot of maneuvers, the Pilot and Commander are pretty busy. This time, that was 2 of 3 licensed operator (Dick, SIW, and Blaine, HBS). During EVA, they are all busy playing safety observer, copying comments from MCC, etc.

Unfortunately, SAREX remains a secondary experiment. This means that we can be demoted in priority with little notice. Further, our sponsor at NASA HQ is the Office of Education. Of all the SAREX Goals and Objectives, the conversations with school kids have a higher profile than talking to Joe Ham. And, let me be candid. In dealing with the astronauts, I came to the realization that with some notable exceptions, the crews also see this as a unique opportunity to have some positive impact on the kids. It took some serious soul searching to get back the reality that talking to the general ham population was THAT important, and we had some raucous SAREX team meetings where I took the unpopular position that we should carry SAREX even if all we did was the school contacts... and crew personal contacts... In fact, for some period, when there was some official flak from the Cief of the Astronaut Office (Dan Brandenstein, at that time), I was on record as telling the crew in training that while it'd be nice if they'd do General QSO passes, it wasn't THAT important. And before the flames come, realize that I was working from a different, and possibly incorrect perspective, I don't know. I do know I've modified my position over time, though.

On this mission, the electrical power constraint that prevented packet operations was considered very real by mission management. So real, in fact, that as late as 5 weeks before launch, we considered cancelling SAREX operations completely, because we were being told we'd just get school passes, ONLY on batteries, and nothing else. That was not an acceptable alternative to us. Nor was it to the crew. Commander Dick Richards called in some markers and got a little relief on the position. Further, from what I understand, Dick was the one who got permission to turn on PACKET, after the SAREX representatives in Mission Control (yes, Virginia, we maintain a full-time presence there during SAREX missions) were turned down. Further, Dick elected to delay stowage by almost 8 hours on his own initiative. We decided that, if we made an issue of it, some paper pusher might make him stow on-time... we sat quietly.

One more note: We schedule a primary and a backup pass in the Crew timeline for each school. Lou McFadin, the Principal Investgator was able to convince me, and subsequently the Astronaut Office and NASA Mission Management that if the school contact was successful on the primary pass, rather than giving the backup pass back to the mission, we would retain it for General QSO Operations. This actually put quite a bit of operating time into the timeline for general ops that never was there before. Packet Ops were ALWAYS intended to be there for when voice ops were not possible... In fact, the original intent of packet ops on STS-35, where Ron Parise (WA4SIR) wore us down to redesign the hardware to include packet, was to have a no-crew-time-impact operating mode, since he was so busy. The fact that we were able to make it such a power miser was a bonus (Thanks, Heathkit, for the HK-21's!).

>At least they showed something on NASA SELECT. This time, even when >they were doing something of interest, the videos were short if not

>at all. The Video Highlights were the only thing that even gave you a  
>hint of what was going on up there.

>

>What happened to the cargo bay cameras when everyone up there was  
>asleep?

>

>They used to show live earth views during sleep periods but lately  
>this has not been happening at all.

Even during Shuttle missions, NASA shares TDRSS time for communications. Between the mandatory data downlinks (on the order of 95 mbit/sec), the Deep Space Network's requirements, Orbiter communications, and experiment data downlinks, the ~300 Mbit/sec bandwidth doesn't last too long. A lot of the payload bay earth views were predicated on Earth-Obs mission requirements in the past, so NASA targeted them. Further, during Spacelab missions, Marshall Space Flight Center frequently has data requirements for PLD BAY camery views, just specifically for background. My personal opinion: The NASA/JSC folks are so proud of the Silicone graphics DMOS display (that simulation of the shuttle including accurate attitude info and ground track) that they've forgotten how captivating the view out the window is! I intend to talk to them later this week about that...

>The last SAREX mission was only good for those who lived south of the  
>28th para. because the orbiter never faced north anytime during that  
>mission. I guess that's o.k. if you live in Texas, Florida or any of  
>the southern states. I would have liked to have at least had a shot  
>at getting a QSL card for the 25th anniversary of the APOLLO lunar  
>landing. I realize that not everyone can make contact during a SAREX  
>mission but it gets a little frustrating when you get cut entirely  
>out of the loop.

Sorry.... Realize that I didn't get a contact, either, last time... Between classes, and weekends in MCC, I was NEVER near a radio when they came overhead. And that's the way it's gone for ME the whole project. My first SAREX contact was with STS-45 during an unscheduled pass... one of the crew wanted to ask us some questions, and as that had been happening, we staffed W5RRR (JSC's ham club station). Since this one was at 0-dark-30, I was told by the Flight Director to leave my console and go cover it... I did, and talked to Brian Duffy for my first Shuttle contact... From his voice, I don't know if he or I was happier (STS-45 is the fondest memory I have of crew training... one of the best groups of humans I've ever known). My other contacts have been a single packet QSO on STS-50, and voice contacts on STS-55, -56 and -64... And I'm supposed to have an inside track according to some folks I've seen posting...

>If I sound a little bitter, it's only a small token of what many of us  
>are feeling about the last few SAREX missions... I am only passing on  
>some of the complaints that I have heard along with some of my own...

>I hope that NASA is listening and takes the time to acknowledge this  
>among all of the other problems that they have to deal with.

Color it noted... I will make a point to bring this up to the rest of the Team. We are cognizant of the folks on the ground, and would like to see more general QSOs. I still maintain my position that the educational aspect is the most important, but I do realize how important it is to get the crews talking to the population in general as a means of maintaining support for the program (both Shuttle AND SAREX!).

>In closing, I seriously hope that this improves over time and all  
>amateurs are allowed to become active participants in the space  
>program, not just selected groups.

We do still have to compete for the crew's time. We're real lucky to have folks like Steve Nagel (N5RAW), Ken Cameron (KB5AWP), Jay Apt (N5QWL), Dick Richards (KB5SIW), and Ellen Baker (KB5SIX) who are so enthusiastic that they go out of their way to make time for SAREX. We also have some crew members who are so motivated by the education aspect that THAT alone was their reason for getting the ticket. And some who were browbeaten into it... but that's another story (ask me later about the crew whose intraoffice routing and approval slips were a list of callsigns and "OTHER").

>P.S. It was not my intent to discredit those who work directly with  
> SAREX at NASA... I know that they work very hard to make SAREX  
> work for ALL amateurs. Keep up the good work and try not to  
> forget the rest of us who want to participate too!

Thanks... We DO try...

Hope this offers some solace. I can understand the frustration, and wish there was something I could do about it. I actually feel that, when I get back down there I might be able to have more impact on some of the issues, like crew training and attitudes, as well as some of the bureaucracy that I deal with better than some other Team members...

<  
<this portion deleted in consideration of Gerry's privacy.. malari>  
<

73, Gerry

--  
Gerry Creager N5JXS \* SAREX Co-Investigator  
gerry@cs.tamu.edu \* A little radio that lets kids talk  
gcreager@gothamcity.jsc.nasa.gov \* to astronauts, and smile  
\*\*\*\*\*

=====

<end of forwarded message>

P.S.

If you think this was as good as I thought it was, drop Gerry an e-mail to let him know.

- Mike -

-----

Date: 21 Sep 1994 00:12:13 GMT  
From: dog.ee.lbl.gov!overload.lbl.gov!dancer.ca.sandia.gov!cronkite.nersc.gov!  
fastrac.llnl.gov!usenet.ee.pdx.edu!cs.uoregon.edu!news.uoregon.edu!  
vixen.cso.uiuc.edu!howland.@@ihnp4.ucsd.edu  
Subject: Satellite frequencies listing  
To: ham-space@ucsd.edu

Looking for latest list of all possible satellite frequencies. Latest list in my possession is dated May 1993 and must be outdated by now. Anyone having the latest listing may post same either here or e-mail to me at:  
wstaub@random.ucs.mun.ca  
Any help will be appreciated. 73, V01CAT, Werner

-----

Date: 20 Sep 1994 06:07:04 -0400  
From: newstf01.cr1.aol.com!newsbf01.news.aol.com!not-for-mail@uunet.uu.net  
Subject: STS-64 Checkpoint #11  
To: ham-space@ucsd.edu

MacSPOC Users-

The enclosed checkpoint reflects tracking into Monday evening CDT and removes 13.2 miles of downtrack error accumulated since the last update. After Discovery's Monday wave-off from a KSC landing, both KSC and EDW deorbit opportunities will be assessed Tuesday. Although weather violations at KSC continue to be forecast, EDW conditions appear acceptable. The following sequence of deorbit opportunities is included in this checkpoint for v1.5 users. It may be input manually by v1.1 users by selecting "Maneuvers..." from the "Update" menu.

Deorbit to KSC on Orbit 174:  
TIG = 10/18:49:39 MET  
DVx = -206.9 fps (retrograde)  
DVy = 231.9 fps (southward)

DVz = -87.5 fps (upward)

Deorbit to KSC on Orbit 175:

TIG = 10/20:22:34 MET  
DVx =-209.1 fps (retrograde)  
DVy =-211.7 fps (northward)  
DVz =-125.4 fps (upward)

Deorbit to EDW on Orbit 176:

TIG = 10/21:53:16 MET  
DVx =-219.2 fps (retrograde)  
DVy =-234.7 fps (northward)  
DVz = -33.9 fps (upward)

Deorbit to EDW on Orbit 177:

TIG = 10/23:26:53 MET  
DVx =-227.1 fps (retrograde)  
DVy = 225.6 fps (southward)  
DVz = -42.2 fps (upward)

-Dan Adamo

=====

File: STS64-11.cp

=====

Orbit 165 at 10/04:37 MET

1994 252 ( 9- 9) 22 22 54.947

1994 263 ( 9-20) 3 0 .000

0.244961562568D+07 0.764113911174D+00

1 165

-0.216105434000D+08 0.327415600000D+06 0.202423350000D+07

0.178103426400D+04 -0.139513201880D+05 0.212479171440D+05

986.5 221912.0 79.00 2.72

010/18:49:39.0 -206.900 231.900 -87.500

010/20:22:34.0 -209.100 -211.700 -125.400

010/21:53:15.6 -219.200 -234.700 -33.900

010/23:26:52.8 -227.100 225.600 -42.200

-----  
Date: Thu, 15 Sep 1994 23:06:47 GMT

From: news.cerf.net!nntp-server.caltech.edu!netline-fddi.jpl.nasa.gov!  
news.byu.edu!gatech!swrinde!howland.reston.ans.net!math.ohio-state.edu!  
scipio.cyberstore.ca!vanbc.wimsey.com!@ihnp4.ucsd.edu  
Subject: Two-Line Orbital Element Set: Space Shuttle  
To: ham-space@ucsd.edu

The most current orbital elements from the NORAD two-line element sets are carried on the Celestial BBS, \*(205) 409-9280\*, and are updated daily (when

possible). Documentation and tracking software are also available on this system. As a service to the satellite user community, the most current elements for the current shuttle mission are provided below. The Celestial BBS may be accessed 24 hours/day at 300, 1200, 2400, 4800, or 9600 bps using 8 data bits, 1 stop bit, no parity.

Element sets (also updated daily), shuttle elements, and some documentation and software are also available via anonymous ftp from archive.afit.af.mil (129.92.1.66) in the directory pub/space.

STS 64

1	23251U	94059A	94258.03341559	.00002177	10701-4	73754-5	0	215
2	23251	57.0069	200.6040	0010111	266.8489	76.3802	16.06008853	813
			1994059B					
1	23253U	94059B	94257.91157669	.00076921	13414-4	10754-3	0	42
2	23253	57.0045	201.1786	0010001	276.5519	82.9036	16.05864435	167

Dr TS Kelso  
tkelso@afit.af.mil

Adjunct Professor of Space Operations  
Air Force Institute of Technology

Date: 20 Sep 1994 22:58:52 GMT

From: ihnp4.ucsd.edu!dog.ee.lbl.gov!news.cs.utah.edu!cs.utexas.edu!swrinde!gatech! news-feed-1.peachnet.edu!news.duke.edu!eff!news.kei.com!ssd.intel.com!chnews!

tboza@network.ucsd.edu

Subject: Windows satellite logging program

To: ham-space@ucsd.edu

Does anyone know where I can acquire a Windows logging program that is designed for satellite operation? I want to track satellite awards (WAS & DXCC) on each of the different birds and satellite modes (SAT MODE: A, B, J, S, etc..) (QSO MODE: SSB, Packet, CW etc..) Today Im using an EXCEL spread sheet because all the Windows based logbook programs currently available are designed for HF operation. HF logging programs don't take in consideration all the additional satellite options, modes and freqs.

Tnx and 73s

Tom WB7ASR...

Date: Tue, 20 Sep 1994 13:46:03 GMT  
From: netcomsv!telesoft!garym@decwrl.dec.com  
To: ham-space@ucsd.edu

References <STS-64.94253.615@alsys.com>, <STS-64.94260.272@alsys.com>, <STS-64.94262.565@alsys.com>oms  
Reply-To : elements-request@alsys.com  
Subject : STS-64 Element Set (94263.557)

STS-64

1 23251U 94059A 94263.55791700 .00054878 10930-4 76563-4 0 382  
2 23251 57.0108 174.3179 0010435 300.6551 59.3503 16.12408131 1723

Satellite: STS-64

Catalog number: 23251

Epoch time: 94263.55791700 = (20 SEP 94 13:23:24.02 UTC)

Element set: 038

Inclination: 57.0108 deg

RA of node: 174.3179 deg

Eccentricity: .0010435

Arg of perigee: 300.6551 deg

Mean anomaly: 59.3503 deg

Mean motion: 16.12408131 rev/day

Space Shuttle Flight STS-64

Keplerian element set JSC-038

from NASA flight Day 11 vector

Decay rate: 5.4878e-04 rev/day^2

Gil Carman

Epoch rev: 172

NASA Johnson Space Center

--

--

Gary Morris Internet: garym@alsys.com (garym@cts.com)  
Alsys Inc. Packet: KK6YB @ NOARY.#NOCAL.CA.USA.NA  
San Diego, CA, USA Phone: +1 619-457-2700 x128 (voice/fax)

-----  
Date: (null)

From: (null)

-----  
End of Ham-Space Digest V94 #266

\*\*\*\*\*